

Abstract Submitted
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Properties of Angular Distributions in Drell-Yan Dilepton Production R. EVAN MCCLELLAN, Jefferson Lab, JEN-CHIEH PENG, University of Illinois, Urbana-Champaign, WEN-CHEN CHANG, Academia Sinica, OLEG TERYAEV, Joint Institute for Nuclear Research — We present a simple geometric model of the Drell-Yan process based on the unobserved 'natural axis' (quark-anti-quark axis) in the dilepton rest frame. We utilize this model to interpret the recent high-precision Z-boson "Drell-Yan" angular distributions data from CMS. We find good agreement with the p_T -dependence of the angular parameters, and extract the relative contributions from the quark-anti-quark and quark-gluon subprocesses, as well as the average degree of 'non-coplanarity' between the quark axis and the hadron plane. We interpret the non-coplanarity as a result of higher-order QCD contributions, and as the cause of the observed Lam-Tung violation.

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